

## CONTROL OF SIMULTANEOUS SWITCH NOISE FROM MULTIPLE OUTPUTS

ABSTRACT

Output switch noise resulting from simultaneous switching is reduced by time multiplexing the output switching operation. A plurality of phase-shifted clock signals are generated such that each of the phase-shifted clock signals exhibits an active (e.g., rising) edge during a single period of the reference clock signal. Different groups of input/output blocks are switched in response to the various phase-shifted clock signals, such that output switching occurs at various times during the period of the reference clock signal. The phase-shifted clock signals can be generated with predetermined phase differences or with dynamically determined phase differences.